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## VOLVO CAR GROUP

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### Press Release

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#### **1990 - 1999: A historical review**

##### **"Technical transformation"**

The 1990s marked the biggest technical transition for Volvo in terms of how Volvo cars were to be designed and built for the future. A modular family of engines was the first result, initially as a six-cylinder engine in the new 960 model in late 1990 and appearing less than a year later in a five-cylinder version in the completely new Volvo 850 GLT - the car with four world firsts: one at the front, one at the rear and two in the middle. These were the transverse five-cylinder engine with its transmission and front-wheel drive integrated into a compact unit, the delta-link rear suspension, the SIPS side impact protection system and the ARH belt reel with its automatic height adjustment. The 850 became the basis for most Volvo models of the 1990s, expanding the range as usual with entry-level models as well as prestige versions, even convertibles. Other new cars from Volvo were the Dutch-built S40/V40 and the prestigious S80 in 1998 which again marked a new era of technology and innovation. Discussions during the decade about staying independent or not resulted in a proposed merger with Renault which fell through in 1993, but became reality in 1999 when Ford Motor Company acquired all the Volvo Car Corporation shares from AB Volvo.

Bullet points: 1990 -Launch of luxury Volvo 960 and Volvo 940. Volvo and Renault conclude alliance with view to eventual merger. 1991 - Volvo 850 - the company's safest and most advanced model so far - is launched and becomes a world success. 1992 - Asbestos was eliminated from car production. 1993 - Production of Volvo 240 ceases after 19 years and over 2.8 million cars. Collapse of proposed merger with Renault. 1994 - SIPS, Side impact protection system - (side-impact airbags) was launched. 1995 - Volvo S40 and V40 - from Volvo's Dutch plant NedCar in Born were launched. 1996 -Volvo C70 Coupé was launched - built in the Uddevalla plant. Volvo 850 updated and renamed Volvo S70/V70. 1997 - Launch of Volvo V70 XC (later the name was changed to Volvo XC70) and C70 Convertible. 1998 - The sedan Volvo S80 becomes first model in large-car range to be based on global shared technologies. 1999 - Volvo Cars was bought from AB Volvo by Ford Motor Company (FMC) in 31 March.

##### **1990**

In the autumn of 1990, Volvo presented the 940/960.

The Volvo 960 had a newly-developed driveline with an in-line, six-cylinder, three-litre engine and an electronically controlled automatic transmission. The new engine, the B6304F, with double overhead camshafts, 24 valves and a power output of 150 kW (204 hp), meant that Volvo was able to advance its position in the high-performance sector. The Volvo 960 replaced the 760 as the top-of-the-line model in the Volvo product range.

The Volvo 940 has the same styling as the Volvo 960 and is equipped with a choice of four-cylinder engines. It is available in GL, GLT and Turbo versions. The Volvo 940 replaced all versions of the Volvo 740 except for the basic variant, the Volvo 740 GL.

The safety belts in the front seats of the Volvo 960 have mechanical belt tensioners as standard. The car can also be fitted with an integrated airbag in the steering wheel, and the three-point safety belt and adjustable head restraint are standard in the saloon. A unique and practical integrated child booster cushion was also presented as an alternative to the conventional armrest.

The Volvo Car Corporation received yet more distinctions for its work on safety, in the form of the Prince Michael

Road Safety Award for the best technical innovation in the field of safety and the Autocar & Motor award for the best safety feature. Both awards were for the integrated child booster cushion in the Volvo 940/960. An agreement was signed between Volvo and Renault on cooperation in the car, truck and bus product areas.

### **1991**

In June 1991, the Volvo Car Corporation unveiled a completely new car, the Volvo 850 GLT, under the banner of "a dynamic car with four unique innovations".

The four unique innovations were: the transverse inline five-cylinder engine; the Delta-link rear axle, which unites the advantages of the live rear axle with those of individual suspension; the integrated side impact protection system SIPS, and the self-adjusting belt reel.

The Volvo 850 GLT represents Volvo's greatest industrial project over the years and is the first step in a new industrial generation.

Other Volvo news during the 1992 model year included a side impact protection system for the Volvo 740, 940 and 960 a new head restraint, a new and even safer steering column and longer service intervals.

The high safety level of Volvo cars was confirmed once again during the year: two American surveys of injuries in collisions - by the Insurance Institute for Highway Safety and the Highway Loss Data Institute - cited Volvo as the safest car on the market.

The Volvo Car Corporation plant in Ghent, Belgium, received the prestigious Japanese "Productive Maintenance Excellence Prize" for its successful work on streamlining quality and productivity.

During the autumn, the final agreement was reached between the Dutch state, the Volvo Car Corporation and Mitsubishi Motors Corporation on NedCar, a new joint company in which each party holds 33.3% of the shares, to replace Volvo Car B.V.

### **1992**

Despite recession and fierce competition on the car market, 1992 was an eventful year for Volvo, one in which the Volvo 850 GLT played a prominent part. Volvo's most extensive marketing campaign ever was held in conjunction with the introduction of this new car in the USA - and the reception it met with was very positive.

During the summer of 1992, just one year after the Volvo 850 GLT was first introduced, the Volvo 850 GLE was launched. This was the next member of this new and highly acclaimed car series - an exciting family car featuring the same advanced technology as the Volvo 850 GLT.

A fully driveable experimental car, the Volvo ECC (Environmental Concept Car) was unveiled at the Paris Show.

The 1993 Volvo 940/960 Estate had a completely newly-designed rear seat with three-point inertia-reel safety belt and head restraints on all three positions - as well as the option of an integrated child safety seat.

The Volvo-Renault Alliance continued to develop. Two new joint organisations were created, one for quality and one for purchasing. A joint organisation for strategic product planning also began to take form.

### **1993**

Several new products appeared during the year. In February, the Volvo 850 Estate was introduced, featuring the same sophisticated technology as the Volvo 850 GLT/GLE. One major item of news was the retractable safety net for the folding rear seat. The vertical tail lamp array was the most noticeable exterior feature.

The Volvo 850 Turbo appeared in August, with Volvo's most powerful engine to date. The power output was a full 225 hp and maximum torque was 300 Nm at only 2,000 rpm.

A number of changes were made in the Volvo 400 Series, bringing these models more closely into line with the Volvo 850. CFCs were eliminated from all new airconditioning units and thereby from the entire Volvo product range.

The recession deepened, particularly in Europe, bringing declining purchasing power and weak demand for cars.

Extensive rationalisation and streamlining at Volvo necessitated the closure of the assembly plant in Uddevalla.

More than 2.8 million cars in the Volvo 240 Series had been built by the time the last Volvo 240, an estate, left the production line in May.

The main principles for a merger with Renault were presented in September but it was subsequently called off, mainly as a result of growing doubts among shareholders and employees.

PG Gyllenhammar and the Volvo Board of Directors resigned and a new Board was elected in January 1994.

### **1994**

The world began to pull out of recession and demand for cars increased again. Volvo concentrated its manufacturing resources in Torslanda and Ghent and the rate of production increased sharply to meet rising demand. The Kalmar Plant closed and the Torslanda Plant was converted to handle the Volvo 850 and the new Volvo 960. This involved major investments in the body shop, to enable several models to be built in one and the same flow.

Volvo's most powerful car yet was presented at the Geneva Car Show: the Volvo 850 T-5R, with a five-cylinder, 250 bhp turbo engine. A simpler version of the five-cylinder engine was introduced on the 1995 model of the Volvo 850: the 2-litre, 10-valve B5202. This engine generates 126 bhp at 6500 rpm. The Volvo 850 is now available in versions ranging from 126 bhp to almost 240 bhp.

The Volvo 850 was also the first car in the world to be fitted with a side airbag to supplement the structural side-impact protection system (SIPS). This "SIPS bag" is fitted into the side of the front seat and is activated in a side-on collision.

Since its introduction in 1991, the Volvo 850 has earned more than 40 international awards. One of the most coveted ones in 1994 was the Good Design Grand Prize, presented by MITI, the Ministry of Trade and Industry in Japan.

A new version of the Volvo 960 was presented during the summer, with a completely new chassis, and new engine and transmission variants.

### **1995**

After a slight rise in 1994, worldwide demand for cars stagnated. Volvo Cars enjoyed a good year in terms of sales,

however, a year that was both exciting and eventful. As competition became ever fiercer, Volvo unveiled a completely new vehicle family while stepping up development efforts on new products. The compact Volvo S40/V40 - the first cars to emerge from the joint venture with Mitsubishi - were presented during the year. The Volvo S40, a four-door sedan, was shown for the first time at the Frankfurt Show in September, while the Volvo V40, a versatile and practical five-door tourer, was put on display in Bologna towards the end of the year. The Mitsubishi Carisma had already been unveiled earlier in the year. Volvo and Mitsubishi were now building completely different car models at the Born Plant, using the same production equipment. With softer, more sweeping lines, the front-wheel drive Volvo S40/V40 represented a departure from the styling of Volvo models in recent years. They were available with a choice of three engines: two four-cylinder petrol engines of 2.0 and 1.8 litres and a turbocharged 1.9-litre diesel. These two cars set a completely new standard of safety in the compact class - pioneering side-impact airbags as standard equipment, for instance. In order to release capacity at the Born Plant, production of the Volvo 480 was discontinued. A total of 80,000 of this model had been made since its introduction. Volvo's best-seller, the Volvo 850, was upgraded with a number of new features during the year. A new diesel version, the Volvo 850 TDI, was introduced - a turbocharged 2.5-litre unit with electronic direct injection and a power output of 140 bhp, combining the comfort of a petrol engine with the fuel economy of a diesel. The 250 bhp Volvo 850 R was the strongest and fastest standard production Volvo model in the company's history. The side-impact airbag, which was a world innovation in the Volvo 850 in 1994, became standard equipment in both the Volvo 850 and the Volvo 960. 1995 was also the year that Volvo made its breakthrough on the British racetracks with a sedan version of the Volvo 850 known as the Volvo 850 Racing.

### NEW MODEL DESIGNATIONS

The system consists of three letters and two figures:

**S** = sedan  
**V** = Versatility  
**C** = Coupé or convertible

The figures following the letter indicate the size of the car - the higher the figure, the bigger the car.

### 1996

A year which brought a whole host of new models and variants. Production of the Volvo S40/V40 was now in full swing, and the two models grew quickly in popularity in Italy, Germany and the UK, amongst other markets. The last of the Volvo 400 series were built in November, bringing the grand total for this range to almost 700,000 units since the start of production. The number of Volvo 850 variants continued to grow. New this year were the Volvo 850Bi-Fuel, which could run on either petrol or CNG, and the Volvo 850 AWD (All Wheel Drive).

The luxury Volvo C70 coupé made its debut at the Paris Motor Show. This was the first car to emerge from Volvo's partnership with TWR (Tom Walkinshaw Racing), and was to be hand-built at the AutoNova plant in Uddevalla. It derived much of its engineering and its safety systems from the Volvo 850.

The successors to the Volvo 850, the Volvo S70 and V70, were ready to go on show in November. Their exterior styling had been revised to match Volvo's new design idiom with its softer, rounded lines, and the interior was also fully remodelled. The safety level had been raised still further, for instance through an upgraded side-impact protection system, improved seat belts and a three-section collapsible steering column. In line with the new system for naming Volvo models, the Volvo 960 Sedan became the Volvo S90 and the estate became the V90, in conjunction with an upgrade of their interiors. The ten-millionth car made by Volvo since the start of production in 1927 was built in the Volvo plant in Malaysia. It was a dark green Volvo 960 Royal.

### 1997

In the beginning of the year the C70 Convertible was ready for launch. Initially sold in Europe only, the Volvo S40/V40 was now launched in certain other markets, including Japan and South Africa. Two powerful turbo versions were also introduced: the 1.9-litre T4 delivering 200 bhp, and the 2.0T of 160 hp. The Volvo S40/V40 was now available with petrol engines of between 105 hp and 200 hp, plus a turbodiesel of 90 hp.

No other car-maker has been more clearly associated with estate cars than Volvo. Volvo estates combine versatility with stylish design, driving pleasure and good performance. This reputation was further reinforced by the new variants launched in the course of 1997: the Volvo V70R, the Volvo V70R AWD and the Volvo V70 XC. The Volvo V70R AWD was launched early in the year. AWD stands for All Wheel Drive, the system which automatically distributes power to the front and rear wheels as surface conditions dictate. The Volvo V70 XC (Cross Country) followed at the Frankfurt International Motor Show in September. This car was launched with the choice of either a 2.5-litre light-pressure turbo of 193 hp with automatic transmission, or a 2.0-litre high-pressure turbo developing 225 hp with a manual gearbox. With its high ground clearance, its advanced all-wheel drive and its sporty good looks, the Volvo V70 XC rapidly became a success in North America and elsewhere. In the course of 1997, Leif Johansson was appointed President and CEO.

## 1998

The introduction of the new Volvo S80 at the end of May was, without doubt, the climax of the year. In the late spring and summer, the new challenger on the saloon market was driven by motoring journalists from all over the world - and their reviews were very enthusiastic.

The Volvo S80, the first car to be built on Volvo's new large platform, contains a number of major technological innovations which make it the most complete Volvo ever. These include the Inflatable Curtain, WHIPS (Whiplash Protection System), a straight transverse six-cylinder engine, integrated GSM telephone, sophisticated IT technology and the first-ever environmental declaration with any car.

In the first year, the new Volvo S80 had already earned a number of awards, including the Prince Michael Road Safety Award for the Inflatable Curtain. It was also acclaimed "the Most Beautiful Car in the World" by the Italian motoring organisation and magazine Automobilia. These awards emphasise the fact that the Volvo S80 is a typical Volvo, particularly in terms of safety, quality, reliability and environmental awareness, but it is just as much a very unusual Volvo in terms of emotional values such as interior and exterior styling. The Volvo S80 is, in other words, a unique saloon, developed without being limited by the special demands involved in manufacturing a saloon and an estate on the same basic platform.

The model is made at the Torslanda Plant in Gothenburg and 21,800 units were sold in the first year.

The tremendous demand for the Volvo S40 and V40 in Europe meant that production was stepped up at the NedCar plant, from 115,000 to over 150,000 units. The already strong model programme was extended with the direct-injection petrol models Volvo S40 1.8i and V40 1.8i. Direct injection of the fuel in the combustion chamber makes more efficient combustion possible and thereby promotes lower fuel consumption. Volvo Cars and Mitsubishi became equal shareholders in the NedCar plant after acquiring the 33% shareholding formerly held by the Dutch state.

At the Paris motor show, Volvo's all-wheel drive estates, the Volvo V70R AWD, the Volvo V70 AWD and the Volvo V70 XC, found company in the all-wheel drive sedan, the Volvo S70 AWD. All these models are fitted with Volvo's sophisticated All Wheel Drive system, which automatically distributes the power between the front and rear wheels depending on the road conditions.

Sales of the Volvo C70 convertible began during the year. This is the first open Volvo since the Volvo Sport in 1956. The assembly plant in Halifax in Canada was closed. This plant was Volvo's first assembly plant outside Sweden and was opened in 1963.

1998 was also the year that the last rear-wheel drive Volvo left the Torslanda Plant. Production of the Volvo 940, Volvo S90 and Volvo V90 (formerly the Volvo 960) ceased at year-end. A total of 667,000 of these models were manufactured over the years.

## 1999

In 1999 Volvo Cars' marketing communications focused strongly on all the new features incorporated in the Volvo S80. Several systems for increased safety and better comfort were presented. These included WHIPS (Whiplash Protection System), a new development in car seat design to improve protection in rear-end collisions, and the IC (Inflatable Curtain) system designed to protect the head in side-on collisions, which represents the third development phase of SIPS, Volvo's comprehensive Side Impact Protection System. The revolutionary Multiplex electrical system uses two main cables, twenty or so computers and digital technology for its communications network. The result is less wiring, increased capacity, better reliability and easier retrofitting of extra equipment. Even more variants of the Volvo S80 became available during 1999: for example the T6, which has a six-cylinder 2.8 litre engine delivering 272 bhp (200 kW). Then there is the S80 2.9, which has a six-cylinder 2.9 litre engine rated at 204 bhp (150 kW) and 280 Nm. Two new five-cylinder models with the 2.4 litre engine offered the choice of 140 bhp or 170 bhp. The S80 T5 has a five-cylinder 2.0 litre engine developing 226 bhp. The S80 2.0T has a 163 bhp, five-cylinder, two-litre engine.

The S80 2.5 D is a diesel-engined model. The S80 Bi-Fuel has a five-cylinder, 2.4 litre engine (140 bhp). Here the driver can switch back and forth from running on petrol to either methane or LPG according to the option fitted. PremAir(r) is a catalytic coating for car radiators which converts potentially-harmful ozone in the air outside the car into oxygen. As from the end of 1999, all Volvo S80 radiators incorporated PremAir(r) coating, for the benefit of the environment at large.

The Volvo C70 Convertible was launched in Europe, with the United Kingdom quickly emerging as its biggest market.

A new 165 bhp non-turbo engine option was introduced for the C70 coupé. In the course of 1999 over twenty different awards and prizes were won by the Volvo S80, C70, S70/V70, 850, S40/V40 and 940/960.

For the Volvo S80, actual sales exceeded sales targets in Sweden, the US, the Netherlands and Spain. The Volvo S40 and V40 were launched in the US market with availability from September. Both proved a resounding success. The sales target for the year was 7,000 cars, but actual sales of the S40/V40 reached 11,800. Volvo Cars took the decision to sell the North Plant at the Olofström Component factory.

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